IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claim 40 and 43, AMEND claims 35-37 and ADD new claims 44-46 in accordance with the following:

1.-34. (cancelled)

35. (Currently amended) An optical amplifier comprising:

a plurality of optical amplification mediums for producing a gain, the gain having gain-characteristics;

a gain controller ~~to maintain a constant~~constantly maintaining the gain for each ~~the plurality of~~ optical amplification mediums~~s~~; and

a gain-equalizer positioned after each optical amplification medium, and equalizing ~~to equalize~~ the gain-characteristic of the optical amplification mediums, ~~the optical amplifications mediums being provided in series such that each gain equalizer equalizes the gain characteristics of a~~each gain-equalizer equalizing the gain-characteristics of the preceding optical amplification medium.

36. (Currently amended) An optical amplifier according to claim 35, wherein the gain equalizers have nearly the same equalizing characteristics.

37. (Currently amended) An optical amplifier according to claim 35, wherein the optical amplifier ~~mediums have~~ has nearly even gain characteristics.

38. (Previously presented) An optical amplifier according to claim 35, wherein the optical amplification mediums are made of erbium doped fibers.

39. (Previously presented) An optical amplifier according to claim 35, wherein the constant gain of the optical amplification mediums is associated with an inversion ratio of about 0.8 to about 1.0 within the amplification medium.

40. (cancelled)

41. (Previously presented) An optical amplifier according to claim 35, wherein the gain equalizer obtains equalized gain within a wavelength-band from about 1490 nm to about 1530 nm.

42. (Previously presented) An optical amplifier according to claim 35, wherein each gain equalizer attenuates gain at a peak wavelength.

43. (cancelled)

44. (New) An optical amplifier according to claim 35, wherein each gain equalizer produces an output, and the output has ~~and~~ a nearly even gain characteristic.

45. (New) An optical amplifier according to claim 35, wherein each gain equalizer equalizes the gain-characteristic with a nearly even gain characteristic.

45. (New) An optical amplifier, comprising:

a plurality of optical amplification mediums for producing a gain, the gain having gain-characteristics;

a gain controller maintaining a constant population inversion ratio for each of the optical amplification mediums; and

a gain-equalizer positioned after each optical amplification medium, and equalizing the gain-characteristics of the optical amplification medium, each gain-equalizer equalizing the gain-characteristics of the preceding optical amplification medium.